Exhibit 4

Expert Comments of Mr. Peter Bloom

October 27, 1998

Mr. Paul Mason
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Dear Mr. Mason:

As requested by EPIC and Sierra Club, I have completed my review of the PALCO HCP/SYP and EIS/EIR for compliance with the biological and legal standards of the ESA, CEQA, and NEPA as they relate to the osprey, sharp-shinned hawk, Cooper's hawk, and golden eagle.

HCP/SYP COMMENTS

I wish to begin this review by stating that in my opinion covered species status should only be allowed when there is sufficient ecological and status information available such that one can assess its current status as well as future status. This means that baseline information and a well articulated and credible monitoring program must be available from the start and a monitoring program must be in place so that the success of the HCP/SYP can be evaluated over time. Without the baseline information no species should be considered for "covered species" status since theoretically an unstudied species might just be more endangered than those which already have legal status. Covered species status could be the kiss of extirpation for some species on certain properties if granted prematurely. Further, if the HCP/SYP is not working, there must be a commitment to the development of a more efficacious alternative plan. Finally, it should be noted that there is a fundamental obstacle to covering unlisted species "as if they were listed" since it is impossible to know why it is listed; or factors such as the continuing threats, distribution, and population size at the time of listing.

In order to grant covered species status for the osprey, and golden eagle, additional field work as well as some modifications to the mitigations section are necessary. On the other hand, so little of even the most basic ecological information on Cooper's hawks and sharp-shinned hawks exists at this time that no reasonable assessment can be made. A paucity of information, or a sense that a species is doing well, or is OK, cannot replace solid research. With several years of focused survey effort and the collection of productivity data, I believe an informed assessment could be made, and covered species status may then be appropriate, or may be found to be illogical if none are found on PL properties .

Osprey - The osprey is a state listed species of special concern. The osprey is an important upper trophic level predator of fish and major component of both fresh water and marine shoreline environments around the world. The osprey has an essentially world-wide distribution and is one of the most well studied and adaptable raptors in the world. Ospreys often nest in heavily forested areas where timber harvesting occurs and if not managed for can experience local population reductions. Likewise, with careful consideration they may coexist with timber harvesting activities. Roger Tory Peterson said it well in the foreword to Alan Poole's 1989

book "Ospreys: a natural and unnatural history" and I quote "Of all the raptors, the Osprey is the one that can live most happily with modern man, if given a chance".

Under the Baseline Condition section, the HCP/SYP states that based upon PL and CDF&G records "there are approximately 63 osprey nests (either historic or active) on or immediately adjacent to PALCO property". This suggests an important and large breeding population, and that there has been some ongoing monitoring of this population. However, it does not appear current since we really don't know how many nests are active, nor do we know how many pairs are actually represented in the 63 nests. Many osprey territories have multiple alternate nests and as used above, the term historic implies inactive status. More helpful population statistics would include the number of currently active pairs (breeding territories) present relative to inactive ones, as well as what constitutes normal annual productivity. This information is basic to any long-term monitoring program where a primary goal is the detection of population changes. For many species this can be difficult to obtain information, for the osprey it requires a small effort. PB-1

If followed, the mitigation and managment actions proposed by PL provide a foundation for the conservation of Ospreys on their lands. In my opinion the current draft needs teeth before it can be considered truly effective. If done properly the osprey should be one of the easiest and most successfully monitored and managed raptors on the PL lands. If the goal of PL is to have the species identified as "covered" then I propose the following changes:

In general terms, the current PL document provides no comment about the potential for future osprey nesting areas and I should also add bald eagles, as they nest in identical situations. Some territories that may have been present historically, and unrecorded, could have been eliminated early in the century. I suspect that there are reaches of rivers with no nesting pairs. PB-2

In some areas the HCP/SYP is weak, or lacks specifics. By example: under Mitigation Measures (Vol. IV, pg. 16) it states "THP areas will be protected by buffers up to 18 acres in size". What is meant by "protected"? How long is a nest site protected? Is this a permanent no-cut area managed for ospreys, or selectively cut only during the non-breeding season? And why an inexact figure like "buffers up to 18 acres in size"? I am sure that a one acre buffer surrounding remote osprey pairs would result in nest failures. On the other hand an 18 acre buffer around nest trees would protect most of them during a timber cutting operation. I recommend a 600 foot radius exclusion zone for ospreys during the nesting season unless the pair has a record of high human tolerance. Many pairs nesting near people are extremely adaptable, those with less experience seem to be less so. PB-3

Within the Mitigation Measures section, the plan states that "All designated nest, perch, and screen trees will be left standing and unharmed during the nesting season, or until it has been determined that young have fledged. After the nesting season, or when the young have fledged, the nest zone may be harvested, although the nest tree shall be left." This failure to incorporate the protection of pilot trees which are used for essential behaviors, and screen trees which protect the nest and the nest tree from wind, is simply inadequate. Ospreys are very tenacious and traditional about their nests, territories, and mates. In order to minimize take, each pair of ospreys and their nests should have a management plan and a select group of trees should be PB-4

retained for the success of each particular pair. This should include the active nest tree, 5 alternate nest trees, 5 pilot trees, trees immediately adjacent to their nest tree that form a windscreen, and several potential future nest trees. PB-4 CONT

The mitigation section (Vol. IV, pg. 16) states that "Surveys for this species and monitoring of nest sites in conjunction with harvest planning are likely to track all historic and active nests through time". In my opinion the osprey must have a much more focused monitoring effort, than the HCP proposes, otherwise the success of the HCP/SYP can never be evaluated. Nesting Osprey populations are one of the more easily and most accurately surveyed of birds of prey. To facilitate long-term monitoring efforts I recommend an initial nest site survey where all active, inactive or alternate nests are mapped, and productivity documented, followed by two years of productivity monitoring to establish baseline productivity estimates. This might best be accomplished by helicopter with 2-3 flights per season. Each helicopter survey would involve approximately 63+ nests and would probably require less than 8 hours to complete. These data would then be used to contrast the results of future efforts and truly allow for monitoring of the conservation plan's effectiveness. Complete surveys should then occur regularly at two year intervals. PB-5

If marbled murrelets nest in the area and helicopters are a potential disturbance, then known osprey nests can be examined from the ground during the breeding season and new nests can be located via helicopter during the non-nesting season. PB-6

Each nest tree, and pilot, or roost tree should be clearly posted with signs indicating that they are wildlife trees and not to be cut. Further, each pair of ospreys should have five alternate potential nest/roost trees identified that could either function naturally as nest trees or could be modified to function as nest trees. I envision an osprey managment plan for each drainage and each territory. PB-7

Due to the shortage of biological information I cannot endorse the proposal to have the osprey included as a covered species within the HCP/SYP. While a modest body of information is apparently available on 63 osprey nests on PL lands, the baseline information and monitoring program necessary to evaluate the plan's success is not. Presently, PL has not demonstrated to the maximum extent practicable, that they will minimize and mitigate the impacts of taking that will occur. An in place managment plan that involves nest surveys, productivity studies, and nest territory management would provide the necessary information, and could justify the inclusion of the osprey as a covered species.

Sharp-shinned Hawk - The sharp-shinned hawk is a California species of special concern. Although a common migrant, the sharp-shinned hawk is perhaps the most poorly studied diurnal raptor in the state. Sharp-shinned hawks breed throughout the coniferous forest belt of California from the southern Sierra Nevada north, but other than anecdotal breeding records and migration records, no significant ecological research has ever been completed in this state. Most reports of this species deal with aspects of migration. Thus I am not surprised that no breeding attempts of sharp-shinned hawks have been documented on PL land. As a result, I cannot support this species being added to a "covered" species list without first assessing its current status and also

establishing a focused monitoring program.

I recommend that this species not be granted covered species status based upon the fact that virtually nothing is known about the species nesting ecology in the area, nothing is known of its breeding distribution, historic or present and assessing the species' status would be impossible without this baseline information. In other words, how would anyone ever know if the HCP/SYP was doing its job? Presently, PL has not demonstrated to the maximum extent practicable, that they can minimize and mitigate the impacts of taking that will occur. PB-8

PL should do five years of monitoring and ecologically focused (when nests are discovered) homework first, add nest territory monitoring at three year intervals to the plan, and then return to the idea of covered species status with the information gathered. I suggest that PL conduct five consecutive spring surveys documenting distribution, density, and nest success over a substantial (>33%) portion of their property. I would also suggest that this be done together with a Cooper's hawk nest survey for the same reason. Once a good understanding of the species' status, distribution, habitat needs, and ecology has been garnered for their property, covered species status can be considered; remembering the inherent difficulties noted in the first paragraph of this report. PB-9

Cooper's Hawk - The Cooper's hawk is a species of special concern in California. The species is observed more often and is more well studied in California than the sharp-shinned hawk. However, all relevant research to the PL HCP/SYP has been conducted in non-coniferous oak woodlands and is not directly applicable to northwest California. According to PL only one nest site has been found on their lands, but I suspect this species does nest regularly in the area.

Presently, PL has not demonstrated to the maximum extent practicable, that they can minimize and mitigate the impacts of taking that will occur. I make the same arguments for both the sharp-shinned hawk and Cooper's hawk, we simply do not have the quantity or quality of information necessary to grant this bird covered species status at this time. The ecological information available for both the sharp-shinned hawk and Cooper's hawk on PL lands is so meager that the impacts of take cannot be properly evaluated, much less ensure that the impacts of taking have been minimized and mitigated as required by the ESA. PB-10

Golden Eagle - The golden eagle is a California species of special concern, a California fully protected species, a Board of Forestry sensitive species pursuant to 14 CCR 895.1 and not mentioned by PL, is also afforded protection under the Federal Bald Eagle Protection Act. Golden Eagles are essentially unstudied in northwest California, and I agree with PL and others that Golden Eagles are infrequent nesters on the northwest coast. Wintering birds are probably regular visitors but I don't see any serious negative impacts resulting from timber harvesting, in fact the opening up of the forest probably benefits Golden Eagles.

Presently, PL has not demonstrated to the maximum extent practicable, that they will minimize and mitigate the impacts of taking that will occur. The most likely negative impact would be timber harvesting near an active nest. However, PL has not engaged in, nor committed itself to the necessary level of reconnaissance for the detection of nest sites (Mitigations, Vol IV, pg. 26). PB-11

I recommend that PL conduct an initial focused helicopter and ground survey of all potential nesting habitat followed by their proposed THP survey protocols in areas proposed for logging. I would presume that cliffs have already been looked at during earlier Peregrine nest surveys conducted in the 1980s. These should be looked at again. However, Golden Eagles often nest in live trees and less often in snags. A spring (mid-May mid-June) helicopter survey of trees adjacent to natural prairie habitat as well as clear cuts areas would be informative and provide the baseline information necessary for future monitoring activities. This should be done with someone who has conducted eagle nest surveys from the air. With reliable nest site data in hand, the mitigations prescribed for nest site protection by PL would then be adequate. PB-11 CONT.

In my opinion all of the species that I have reviewed need further field assessments and committed mitigations before covered species status is granted.

EIS/EIR COMMENTS

My comments on the EIS/EIR are essentially an expansion of my comments on the osprey, sharp-shinned hawk, Cooper's hawk, and golden eagle for the HCP/SYP; and assume an understanding of those comments.

Osprey - "Timber harvesting has the potential for negative impacts on this species through disturbance of active nests or harvest of potential nest and perching trees." (EIS, Chap. 3.10, pg. 70) For this reason I believe that a complete initial survey of all likely PL habitat should be done to ascertain the distribution of all nesting pairs of ospreys, and reproductive success for these pairs - a relatively easy task. Further, once this baseline information is gathered, it should be used to establish a monitoring program to ensure that the HCP/SYP is functional. Biennial surveys that recorded occupancy, nest success, and fledging success is necessary to provide a credible basis for such a monitoring program. This should be followed by producing osprey management plans by drainage, with a management prescription for each territory. PB-12

In contrast to PLs plan which allows the removal of all but the nest trees I strongly support the statement that "No designated nest trees, screening trees, perch trees or replacement trees may be harmed or removed within the buffer zone at any time of year." The designation of these trees is a critical task that should be performed by a competent raptor biologist with concurrence from the FWS and CDF&G. PB-13

The conclusion of the EIS/EIR regarding level of significance remaining after applicant proposed mitigation (Chap. 3.10, pg 153), cannot be supported in the absence of a survey protocol which documents the distribution, and productivity of this significant osprey population, development of an osprey managment plan, and lastly, biennial territory monitoring. PB-14

Sharp-shinned Hawk & Cooper's Hawk - The HCP/SYP and EIS/EIR provide almost no information on the abundance, distribution and biology of these two species on PL lands. Hence, from the perspective of NEPA it is impossible to objectively analyze the direct and cumulative environmental impacts of the HCP/SYP. If one can't do this, it follows that feasible alternatives and mitigation measures cannot be analyzed.

PB-15

While there is a limited body of information that young and mid seral forests benefit these two species, there is simply not enough information to justify the generalized conclusions of the EIS regarding the adequacy of proposed mitigation and the level of significance remaining. (Chap. 3.10, pg. 149-150)

Golden Eagle - The background information available for Golden Eagles on PL property is not much better than for sharp-shinned hawks and Cooper's hawks. Northwest California, as well as the northwest coastal U.S., is one of the most poorly studied regions of the nation on the subject of golden eagles. It is an unjustifiable leap to make the statement that "None of the alternatives would be expected to negatively directly or indirectly affect the golden eagle through the long term due to the low likelihood of potential nesting in the Project Area, and the level of protection that any potential future nest sites would receive there." (Chap. 3.10, pg.143). As described in my HCP/SYP comments, baseline information is lacking which makes it impossible to objectively analyze the direct and cumulative environmental impacts of the HCP/SYP.

PB-16

The home range of golden eagles has been reported to be as large as 36 square miles. If we take this as the maximum home range size, there could be as many as nine pairs of golden eagles nesting on the 211,000 acres of PL property. More contemporary research confirms that most golden eagles pairs have even smaller home ranges which means that given the size of the PL property it is actually unlikely that no golden eagles nest on the property. Focused surveys conducted by experienced eagle biologists at the appropriate time of year would facilitate a more informed decision. (see HCP/SYP comments)

PB-17

Thank you for the invitation to assist you with this project. If you have any questions, I can be reached at 714-544-6147.

Sincerely,

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Bibliography:

Asay, C.E. 1987. Habitat and productivity of Cooper's hawks nesting in California. Calif. Fish and Game 73:80-87.

Bird, D.M. 1983. Biology and managment of bald eagles and ospreys. Proceedings of the 1st international symposium on bald eagles and ospreys. Macdonald Raptor Research Centre of McGill University & Raptor Research Foundation, Inc.

Dixon, J.B. 1937. Golden Eagle in San Diego County, California. Condor 39:49-56.

Poole, A.F. 1989. Ospreys: A natural and unnatural history. Cambridge University Press.

Johnsgard, P.A. 1990. Hawks, eagles, and falcons of North America: Biology and Natural History. Smithsonian Institution Press.

Ogden, J.C. 1972. Transactions of the North American Osprey Research Conference. U.S. Department of the Interior, National Park Service.

Palmer, R.S. 1988. Handbook of North American birds: Diurnal raptors (part 1 & 2). Yale University Press.

Reynolds, R.T., E.C. Meslow, and H.M. Wight. 1982. Nesting habitat of coexisting Accipiter in Oregon. Journal of Wildlife Management 46:124-138.

Rosenfield, R.N., J. Bielefeldt. 1993. Cooper's Hawk. The birds of North America, No. 75. The Academy of Natural Sciences of Philadelphia.